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# SEQUENCE LIST

<110> Neurogenex Co., Ltd.

<120> ENHANCED INSERTED YELLOW FLUORESCENCE PROTEIN AND ITS APPLICATION

<130> PN0023095.00

<150> KR10-2002-0012409

<151> 2002-03-08

<150> KR10-2002-0015217

<151> 2002-03-21

<150> KR10-2002-0015219

<151> 2002-03-21

<160> 16

<170> KopatentIn 1.71

<210> 1

<211> 738

<212> PRT

<213> Artificial Sequence

<220>

<223> y-citrine of fluorescence protein

<400> 1

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1

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10

15

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 35 40 45

Gly Thr Cys Gly Ala Gly Cys Thr Gly Gly Ala Cys Gly Gly Cys Gly  
 50 55 60

Ala Cys Gly Thr Ala Ala Ala Cys Gly Gly Cys Cys Ala Cys Ala Ala  
 65 70 75 80

Gly Thr Thr Cys Ala Gly Cys Gly Thr Gly Thr Cys Cys Gly Gly Cys  
 85 90 95

Gly Ala Gly Gly Gly Cys Gly Ala Gly Gly Gly Cys Gly Ala Thr Gly  
 100 105 110

Cys Cys Ala Cys Cys Thr Ala Cys Gly Gly Cys Ala Ala Gly Cys Thr  
 115 120 125

Gly Ala Cys Cys Cys Thr Gly Ala Ala Gly Thr Thr Cys Ala Thr Cys  
 130 135 140

Thr Gly Cys Ala Cys Cys Ala Cys Cys Gly Gly Cys Ala Ala Gly Cys  
 145 150 155 160

Thr Gly Cys Cys Cys Gly Thr Gly Cys Cys Cys Thr Gly Gly Cys Cys  
 165 170 175

Cys Ala Cys Cys Cys Thr Cys Gly Thr Gly Ala Cys Thr Ala Cys Cys  
 180 185 190

Thr Thr Cys Gly Gly Cys Thr Ala Cys Gly Gly Cys Cys Thr Gly Ala  
 195 200 205

Thr Gly Thr Gly Cys Thr Thr Cys Gly Cys Cys Gly Cys Thr Ala  
 210 215 220

Cys Cys Cys Cys Gly Ala Cys Cys Ala Cys Ala Thr Gly Ala Ala Gly  
 225 230 235 240

Cys Ala Gly Cys Ala Cys Gly Ala Cys Thr Thr Cys Thr Thr Cys Ala  
 245 250 255

Ala Gly Thr Cys Cys Gly Cys Cys Ala Thr Gly Cys Cys Cys Gly Ala  
 260 265 270

Ala Gly Gly Cys Thr Ala Cys Gly Thr Cys Cys Ala Gly Gly Ala Gly  
 275 280 285

Cys Gly Cys Ala Cys Cys Ala Thr Cys Thr Thr Cys Thr Thr Cys Ala  
 290 295 300

Ala Gly Gly Ala Cys Gly Ala Cys Gly Gly Cys Ala Ala Cys Thr Ala  
 305 310 315 320

Cys Ala Ala Gly Ala Cys Cys Cys Gly Cys Gly Cys Cys Gly Ala Gly  
 325 330 335

Gly Thr Gly Ala Ala Gly Thr Thr Cys Gly Ala Gly Gly Gly Cys Gly  
 340 345 350

Ala Cys Ala Cys Cys Cys Thr Gly Gly Thr Gly Ala Ala Cys Cys Gly  
 355 360 365

Cys Ala Thr Cys Gly Ala Gly Cys Thr Gly Ala Ala Gly Gly Gly Cys  
 370 375 380

Ala Thr Cys Gly Ala Cys Thr Thr Cys Ala Ala Gly Gly Ala Gly Gly  
 385 390 395 400

Ala Cys Gly Gly Cys Ala Ala Cys Ala Thr Cys Cys Thr Gly Gly Gly  
 405 410 415

Gly Cys Ala Cys Ala Ala Gly Cys Thr Gly Gly Ala Gly Thr Ala Cys  
 420 425 430

Ala Ala Cys Thr Ala Cys Gly Gly Thr Gly Gly Ala Thr Cys Cys Gly  
 435 440 445

Gly Thr Gly Cys Thr Ala Gly Cys Ala Ala Cys Ala Gly Cys Cys Ala  
 450 455 460

Cys Ala Ala Cys Gly Thr Cys Thr Ala Thr Ala Thr Cys Ala Thr Gly  
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Gly Cys Cys Gly Ala Cys Ala Ala Gly Cys Ala Gly Ala Ala Gly Ala  
 485 490 495

Ala Cys Gly Gly Cys Ala Thr Cys Ala Ala Gly Gly Thr Gly Ala Ala  
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Cys Thr Thr Cys Ala Ala Gly Ala Thr Cys Cys Gly Cys Cys Ala Cys  
 515 520 525

Ala Ala Cys Ala Thr Cys Gly Ala Gly Gly Ala Cys Gly Gly Cys Ala  
 530 535 540

Gly Cys Gly Thr Gly Cys Ala Gly Cys Thr Cys Gly Cys Cys Gly Ala  
 545 550 555 560

Cys Cys Ala Cys Thr Ala Cys Cys Ala Gly Cys Ala Gly Ala Ala Cys  
 565 570 575

Ala Cys Cys Cys Cys Cys Ala Thr Cys Gly Gly Cys Gly Ala Cys Gly  
 580 585 590

Gly Cys Cys Cys Cys Gly Thr Gly Cys Thr Gly Cys Thr Gly Cys Cys  
 595 600 605

Cys Gly Ala Cys Ala Ala Cys Cys Ala Cys Thr Ala Cys Cys Thr Gly  
 610 615 620

Ala Gly Cys Thr Ala Cys Cys Ala Gly Thr Cys Cys Gly Cys Cys Cys  
 625 630 635 640

Thr Gly Ala Gly Cys Ala Ala Ala Gly Ala Cys Cys Cys Cys Ala Ala  
 645 650 655

Cys Gly Ala Gly Ala Ala Gly Cys Gly Cys Gly Ala Thr Cys Ala Cys  
 660 665 670

Ala Thr Gly Gly Thr Cys Cys Thr Gly Cys Thr Gly Gly Ala Gly Thr  
 675 680 685

Thr Cys Gly Thr Gly Ala Cys Cys Gly Cys Cys Gly Cys Cys Gly Gly  
 690 695 700

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 705 710 715 720

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Ala Ala

<210> 2  
 <211> 738  
 <212> PRT  
 <213> Artificial Sequence

&lt;220&gt;

&lt;223&gt; Peridot of fluorescence protein

&lt;400&gt; 2

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 20 25 30

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 35 40 45

Gly Thr Cys Gly Ala Gly Cys Thr Gly Gly Ala Cys Gly Gly Cys Gly  
 50 55 60

Ala Cys Gly Thr Ala Ala Ala Cys Gly Gly Cys Cys Ala Cys Ala Ala  
 65 70 75 80

Gly Thr Thr Cys Ala Gly Cys Gly Thr Gly Thr Cys Cys Gly Gly Cys  
 85 90 95

Gly Ala Gly Gly Gly Cys Gly Ala Gly Gly Gly Cys Gly Ala Thr Gly  
 100 105 110

Cys Cys Ala Cys Cys Thr Ala Cys Gly Gly Cys Ala Ala Gly Cys Thr  
 115 120 125

Gly Ala Cys Cys Cys Thr Gly Ala Ala Gly Thr Thr Cys Ala Thr Cys  
 130 135 140

Thr Gly Cys Ala Cys Cys Ala Cys Cys Gly Gly Cys Ala Ala Gly Cys  
 145 150 155 160

Thr Gly Cys Cys Cys Gly Thr Gly Cys Cys Cys Thr Gly Gly Cys Cys

	165		170		175										
Cys	Ala	Cys	Cys	Cys	Thr	Cys	Gly	Thr	Gly	Ala	Cys	Thr	Ala	Cys	Cys
	180		185		190										
Thr	Thr	Cys	Gly	Gly	Cys	Thr	Ala	Cys	Gly	Gly	Cys	Cys	Thr	Gly	Ala
	195		200		205										
Thr	Gly	Thr	Gly	Cys	Thr	Thr	Cys	Gly	Cys	Cys	Cys	Gly	Cys	Thr	Ala
	210		215		220										
Cys	Cys	Cys	Cys	Gly	Ala	Cys	Cys	Ala	Cys	Ala	Thr	Gly	Ala	Ala	Gly
225			230		235										240
Cys	Ala	Gly	Cys	Ala	Cys	Gly	Ala	Cys	Thr	Thr	Cys	Thr	Thr	Cys	Ala
	245		250		255										
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	260		265		270										
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	275		280		285										
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	290		295		300										
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305			310		315										320
Cys	Ala	Ala	Gly	Ala	Cys	Cys	Cys	Gly	Cys	Gly	Cys	Cys	Gly	Ala	Gly
	325		330		335										
Gly	Thr	Gly	Ala	Ala	Gly	Thr	Thr	Cys	Gly	Ala	Gly	Gly	Gly	Cys	Gly
	340		345		350										
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355	360	365
Cys Ala Thr Cys Gly Ala Gly Cys Thr Gly Ala Ala Gly Gly Gly Cys		
370	375	380
Ala Thr Cys Gly Ala Cys Thr Thr Cys Ala Ala Gly Gly Ala Gly Gly		
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Ala Cys Gly Gly Cys Ala Ala Cys Ala Thr Cys Cys Thr Gly Gly Gly		
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Gly Cys Ala Cys Ala Ala Gly Cys Thr Gly Gly Ala Gly Thr Ala Cys		
420	425	430
Ala Ala Cys Thr Ala Cys Gly Gly Thr Gly Gly Ala Thr Cys Cys Gly		
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Gly Thr Gly Cys Thr Ala Gly Cys Ala Ala Cys Ala Gly Cys Cys Ala		
450	455	460
Cys Ala Ala Cys Gly Thr Cys Thr Ala Thr Ala Thr Cys Ala Thr Gly		
465	470	475 480
Gly Cys Cys Gly Ala Cys Ala Ala Gly Cys Ala Gly Ala Ala Gly Ala		
485	490	495
Ala Cys Gly Gly Cys Ala Thr Cys Ala Ala Gly Gly Thr Gly Ala Ala		
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Cys Thr Thr Cys Ala Ala Gly Ala Thr Cys Cys Gly Cys Cys Ala Cys		
515	520	525
Ala Ala Cys Ala Thr Cys Gly Ala Gly Gly Ala Cys Gly Gly Cys Ala		
530	535	540
Gly Cys Gly Thr Gly Cys Ala Gly Cys Thr Cys Gly Cys Cys Gly Ala		



545                      550                      555                      560  
 Cys Cys Ala Cys Thr Ala Cys Cys Ala Gly Cys Ala Gly Ala Ala Cys  
                                  565                      570                      575  
 Ala Cys Cys Cys Cys Cys Ala Thr Cys Gly Gly Cys Gly Ala Cys Gly  
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 Gly Cys Cys Thr Cys Gly Thr Gly Cys Thr Gly Cys Thr Gly Cys Cys  
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 Cys Gly Ala Cys Ala Ala Cys Cys Ala Cys Thr Ala Cys Cys Thr Gly  
                                  610                      615                      620  
 Ala Gly Cys Thr Ala Cys Cys Ala Gly Thr Cys Cys Gly Cys Cys Cys  
 625                                   630                      635                      640  
 Thr Gly Ala Gly Cys Ala Ala Ala Gly Ala Cys Cys Cys Cys Ala Ala  
                                  645                      650                      655  
 Cys Gly Ala Gly Ala Ala Gly Cys Gly Cys Gly Ala Thr Cys Ala Cys  
                                  660                      665                      670  
 Ala Thr Gly Gly Thr Cys Cys Thr Gly Cys Thr Gly Gly Ala Gly Thr  
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 Thr Cys Gly Thr Gly Ala Cys Cys Gly Cys Cys Gly Cys Cys Gly Gly  
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 Gly Ala Thr Cys Ala Cys Thr Ala Thr Cys Gly Gly Cys Ala Thr Gly  
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<210> 3  
<211> 45  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> BamHI/5AB-F primer

<400> 3  
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<210> 4  
<211> 45  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Nhe1/5AB-R primer

<400> 4  
gggggctagc acctgtccat gtgtaggaca tcgagcagca gacaa 45

<210> 5  
<211> 30  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> BamHI/CaM F primer

<400> 5  
gggggatcca tgcatgacca actgacagaa 30

<210> 6  
<211> 30  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> NheI/CaM R primer

<400> 6  
ggggctagcc ttigtgtca tcattigtac 30

<210> 7  
<211> 34  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Hind3/EYFP(Y145MEL)-F primer

<400> 7  
ggggaagcctt ggatggagc tcaacagcca caac 34

<210> 8  
<211> 39  
<212> DNA  
<213> Artificial Sequence

<220>

<223> BamHI,NheI/Yins-R primer

<400> 8

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39

<210> 9

<211> 39

<212> DNA

<213> Artificial Sequence

<220>

<223> BamHI,NheI/Yins-F primer

<400> 9

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39

<210> 10

<211> 33

<212> DNA

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<220>

<223> NotI/EYFP(Y145GGT)-R primer

<400> 10

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33

<210> 11

<211> 34  
<212> DNA  
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<220>  
<223> Hind3/EYFP(Y145MEL)-F primer

<400> 11  
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34

<210> 12  
<211> 33  
<212> DNA  
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<220>  
<223> NotI/EYFP(Y145GGT)-R primer

<400> 12  
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33

<210> 13  
<211> 1182  
<212> DNA  
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<220>  
<223> Bio-Cart for Calcium

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60

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aagctggagt acaactacgg tggatccatg catgaccaac tgacagaaga gcagatcgca	480
gaatttaaag aggctttctc cctatttgac aaggacgggg atgggacaat aacaaccaag	540
gagctgggga cggatgatgc gtctctgggg cagaacccca cagaagcaga gctgcaggac	600
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atgatggcaa gaaaaatgaa agacacagac agtgaagaag aaattagaga agcgttccgt	720
gtgtttgata aggatggcaa tggctacatc agtgcagcag agcttcgcca cgtgatgaca	780
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aacagccaca acgtctatat catggccgac aagcagaaga acggcatcaa ggtgaacttc	960
aagatccgcc acaacatcga ggacggcagc gtgcagctcg ccgaccacta ccagcagaac	1020
acccccatcg gcgacggcct cgtgctgctg cccgacaacc actacctgag ctaccagtcc	1080
gccctgagca aagaccccaa cgagaagcgc gatcacatgg tcctgctgga gttcgtgacc	1140

gccgccggga tcactatcgg catggacgag ctgtacaagt aa

1182

<210> 14

<211> 48

<212> DNA

<213> Artificial Sequence

<220>

<223> BamHI/DEVD F primer

<400> 14

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48

<210> 15

<211> 49

<212> DNA

<213> Artificial Sequence

<220>

<223> NheI/DEVD R primer

<400> 15

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49

<210> 16

<211> 795

<212> DNA

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<220>

<223> DEVDins of Bio-sensor

<400> 16

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ggcaagctga cctgaagtt catctgcacc accggcaagc tgcccgtgcc ctggcccacc	180
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cagcacgact tcttcaagtc cgccatgccc gaaggctaag tccaggagcg caccatcttc	300
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cgcgatacaca tggtcctgct ggagttcgtg accgccgcgg ggatcactct cggcatggac	780
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